LISTINGS OF THE CLAIMS:

Claims 1-9 (Canceled)

10. (Previously presented)   A method of cleaning an integrated circuit having a ferroelectric layer, the method comprising:

    providing an integrated circuit substrate having an exposed ferroelectric layer with a damage portion; and

    selectively removing a damaged portion of the exposed ferroelectric layer with a cleaning solution by contacting the exposed ferroelectric layer with said cleaning solution, wherein said cleaning solution comprises a fluoride, an organic acid having a carboxyl group, an alkaline pH adjusting agent, and water.

11. (Previously presented)   The method of claim 10, wherein the exposed ferroelectric layer includes a surface of the ferroelectric layer passed through annealing after deposition on the integrated circuit substrate, and the step of contacting the exposed ferroelectric layer with said cleaning solution includes etching back the ferroelectric layer by about 100 Å to about 500 Å from a top portion of the ferroelectric layer.

12. (Previously presented)   The method of claim 10, wherein the exposed ferroelectric layer is interposed between upper and lower electrode layers, and the method further comprises forming a capacitor by patterning the upper electrode layer, the ferroelectric layer and the lower electrode layer, before contacting the exposed ferroelectric layer with said cleaning solution.

13. (Previously presented)   The method of claim 10, wherein the pH of the cleaning solution is greater than 5 to about 6.0.

14. (Previously presented)   The method of claim 10, wherein the fluoride is hydrogen fluoride, hydroboron tetrafluoride or ammonium fluoride.

15. (Previously presented)   The method of claim 10, wherein the organic acid is formic acid, acetic acid or citric acid.

16. (Previously presented)   The method of claim 10, wherein the alkaline pH adjusting agent is ammonium hydroxide, potassium hydroxide, tetramethylammonium hydroxide or tetraethylammonium hydroxide.

17. (Previously presented)   The method of claim 10, wherein the content of the fluoride is about 0.01% to about 1% by weight based on the total weight of said cleaning solution.

18. (Previously presented)   The method of claim 10 wherein the content of the organic acid with carboxyl group is about 1% to about 50% by weight based on the total weight of said cleaning solution.

19. (Previously presented)   The method of claim 10, wherein the content of the alkali pH adjusting agent is about 0.25% to about 15% by weight based on the total weight of said cleaning solution.

20. (Previously presented)   A method of cleaning an integrated circuit, the method comprising:

    providing an integrated circuit having an exposed ferroelectric layer; and

    selectively removing a damaged portion of the exposed ferroelectric layer with a cleaning

solution by contacting the exposed ferroelectric layer with said cleaning solution, wherein said

cleaning solution comprises a fluoride, an organic acid having a carboxyl group, an alkaline pH

adjusting agent, and water, and wherein the organic acid dissolves a reduced metallic component

of the ferroelectric layer.

21. (Previously presented)   The method of claim 20, further comprises the step of:

    depositing and annealing the ferroelectric layer prior to selectively removing the damage

portion of the ferroelectric layer.

22. (Previously presented)   The method of claim 20, wherein the step of selectively removing

the damage portion of the ferroelectric layer includes removing a semi-stable pyrochlore

structure that appears from a top portion of the ferroelectric layer to a predetermined depth.

23. (Previously presented)   The method of claim 20, wherein the pH of the cleaning solution is

greater than 5 to about 6.0.

24. (Previously presented)   The method of claim 20, wherein contacting the exposed

ferroelectric layer with said cleaning solution includes the exposed ferroelectric layer in contact

with said cleaning solution for about 30 to about 600 seconds such that the damaged portion of

the ferroelectric layer is completely removed.

25. (Previously presented)   The method of claim 20, wherein the exposed ferroelectric layer includes a surface of the ferroelectric layer passed through annealing after deposition on the integrated circuit substrate, and the step of contacting the exposed ferroelectric layer with said cleaning solution includes etching back the ferroelectric layer by about 100 Å to about 500 Å from a top portion of the ferroelectric layer.

26. (Previously presented)   The method of claim 20, wherein the exposed ferroelectric layer is interposed between upper and lower electrode layers, and the method further comprises forming a capacitor by patterning the upper electrode layer, the ferroelectric layer and the lower electrode layer, before contacting the exposed ferroelectric layer with said cleaning solution.

27. (Previously presented)   The method of claim 20, wherein the fluoride is hydrogen fluoride, hydroboron tetrafluoride, or ammonium fluoride.

28. (Previously presented)   The method of claim 20, wherein the organic acid is formic acid, acetic acid, or citric acid.

29. (Previously presented)   The method of claim 20, wherein the alkaline pH adjusting agent is ammonium hydroxide, potassium hydroxide, tetramethylammonium hydroxide, or tetraethylammonium hydroxide.

30. (Previously presented)   The method of claim 20, wherein the content of the fluoride is about 0.01% to about 1% by weight based on the total weight of said cleaning solution.

31. (Previously presented)   The method of claim 20, wherein the content of the organic acid

with carboxyl group is about 1% to about 50% by weight based on the total weight of said

cleaning solution.

32. (Previously presented)   The method of claim 20, wherein the content of the alkali pH

adjusting agent is about 0.25% to about 15% by weight based on the total weight of said cleaning

solution.

33. (Previously presented)   The method of claim 20, wherein the ferroelectric layer is formed

of a STO, a BST, a PZT, or a PLZT layer.